§ 162.017–2 Type.

This specification covers the design and construction of pressure-vacuum relief valves intended for use in venting systems on all tank vessels transporting inflammable or combustible liquids.

[56 FR 35827, July 29, 1991]

§ 162.017–3 Materials, construction, and workmanship.

(a) The valves shall be of substantial construction and first class workmanship and shall be free from imperfections which may affect its serviceability.

(b) Bodies of pressure-vacuum relief valves must be made of bronze or such corrosion-resistant material as may be approved by the Commanding Officer, USCG Marine Safety Center.

(c) Valve discs, spindles, and seats shall be made of bronze or such corrosion-resistant material as may be approved by the Commanding Officer, USCG Marine Safety Center.

(d) Where springs are employed to actuate the valve discs, the springs shall be made of corrosion-resistant material. Springs plated with corrosion-resistant material are not acceptable.

(e) Flame screens shall be made of corrosion-resistant wire.

(f) Nonmetallic materials will not be permitted in the construction of the valves, except bushings used in way of moving parts and gaskets may be made of nonmetallic material resistant to attack by the product carried. Nonmetallic diaphragms will be allowed where diaphragm failure will not result in unrestricted flow of cargo vapors to the atmosphere nor in an increase in the pressure or vacuum at which the valve normally releases.

(g) The design and construction of the valves shall permit overhauling and repairs without removal from the line.

(h) Valve discs shall be guided by a ribbed cage or other suitable means to prevent binding, and to insure proper seating. Where valve stems are guided by bushings suitably designed to prevent binding and to insure proper seating, the valves need not be fitted with ribbed cages.

(i) The disc shall close tight against the valve seat by metal to metal contact, however, resilient seating seals may be provided if the design is such that the disc closes tight against the seat in case the seals are destroyed or in case they carry away.

(j) Pressure-vacuum relief valves for venting cargo tanks shall be of not less than 2½ inches nominal pipe size.

(k) Bodies of valves shall be designed to withstand a hydrostatic pressure of at least 125 pounds per square inch without rupturing or showing permanent distortion.

(l) The valve discs may be solid or made hollow so that weight material may be added to vary the lifting pressure. If hollow discs are employed, a watertight bolted cover shall be fitted to encase the weight material. The pressure at which the discs open shall not exceed 120 percent of the set pressure.

(m) The free area through the valve seats at maximum lift shall not be less than the cross-sectional area of the valve inlet connection.

(n) Double flame screens of 20×20 corrosion-resistant wire mesh with a ½-inch corrosion-resistant separator on a single screen of 30×30 corrosion-resistant wire mesh shall be fitted on all openings to atmosphere. The net free area through the flame screens shall not be less than 1½ times the cross-sectional area of the vent inlet from the cargo tanks.

(o) Valve bodies may have screwed or flanged pipe connections, or such types of connections as may be approved by the Commanding Officer, USCG Marine Safety Center. If flanged, the thickness and drilling shall comply with USA standards for 150-pound bronze flanged fittings.

(p) Where design of valve does not permit complete drainage of condensate to attached cargo tank or vent line, the valve body shall be fitted with a plugged drain opening on the side of the atmospheric outlet of not less than ½ inch pipe size.

(q) Relief pressure adjusting mechanisms shall be permanently secured by

means of lockwires, locknuts, or other acceptable means.

[CGFR 50–9, 15 FR 1680, Mar. 25, 1950, as amended by CGFR 68–82, 33 FR 18907, Dec. 18, 1968; CGD 88–032, 56 FR 35827, July 29, 1991; CGD 95–072, 60 FR 50467, Sept. 29, 1995; CGD 96–041, 61 FR 50734, Sept. 27, 1996; USCG 2001–10224, 66 FR 48620, Sept. 21, 2001]

§ 162.017–4 Inspections and testing.

Pressure-vacuum relief valves may be inspected and tested at the plant of the manufacturer. An inspector may conduct such tests and examinations as may be necessary to determine compliance with this specification.

[56 FR 35827, July 29, 1991]

§ 162.017–5 Marking.

(a) Each valve shall be legibly marked with the style, type or other designation of the manufacturer, the size, pressure and vacuum setting and name or registered trademark of the manufacturer and Coast Guard approval number. The minimum wording for showing the approval number shall be ''USCG/162.017/* *'' or ''USCG 162.017–* *''.

(b) [Reserved]

[CGFR 68–82, 33 FR 18908, Dec. 18, 1968, as amended by USCG 2001–10224, 66 FR 48620, Sept. 21, 2001]

§ 162.017–6 Procedure for approval.

(a) *General.* Pressure-vacuum relief valves intended for use on tank vessels must be approved for such use by the Commanding Officer, USCG Marine Safety Center, 400 Seventh Street SW., Washington, DC 20590–0001.

(b) *Drawings and specifications.* Manufacturers desiring approval of a new design or type of pressure-vacuum relief valve shall submit drawings in quadruplicate showing the design of the valve, the sizes for which approval is requested, method of operation, thickness and material specification of component parts, diameter of seat opening and lift of discs, mesh and size of wire of flame screens.

(c) *Pre-approval tests.* Before approval is granted, the manufacturer shall have tests conducted, or submit evidence that such tests have been conducted, by the Underwriters' Laboratories, the Factory Mutual Laboratories, or by a properly supervised and inspected test laboratory acceptable to the Commandant (G-MSE), relative to determining the lift, relieving pressure and vacuum, and flow capacity of a representative sample of the pressure-vacuum relief valve in each size for which approval is desired. Test reports including flow capacity curves must be submitted to the Commanding Officer, USCG Marine Safety Center.

[56 FR 35827, July 29, 1991, as amended by CGD 95–072, 60 FR 50467, Sept. 29, 1995; CGD 96–041, 61 FR 50734, Sept. 27, 1996; USCG 2001–10224, 66 FR 48620, Sept. 21, 2001; USCG–2004–18884, 69 FR 58350, Sept. 30, 2004]

Subpart 162.018—Safety Relief Valves, Liquefied Compressed Gas

§ 162.018–1 Applicable specifications, and referenced material.

(a) There are no other specifications applicable to this subpart except as noted in this subpart.

(b) The following referenced material from industry standards of the issue in effect on the date safety relief valves are manufactured shall form a part of the regulations of this subpart (see §§ 2.–75–17 through 2.75–19 of Subchapter A (Procedures Applicable to the Public) and Subpart 50.15 of Subchapter F (Marine Engineering) of this chapter):

(1) ASME (American Society of Mechanical Engineers) Code (see § 50.–15–5 of subchapter F (Marine Engineering) of this chapter): The following paragraph from section VIII of the ASME Code:

(i) UG–131, flow rating of valves, see § 162.018–7(a).

(2) CGA (Compressed Gas Association) standard: The following standard of the Compressed Gas Association (see § 50.15–20(a) of Subchapter F (Marine Engineering) of this chapter):

(i) S–1.2.5.2, Flow test data for safety and relief valves for use on pressure vessels, see § 162.018–7(a).

(c) A copy of this specification and the referenced material listed in this section, if used, shall be kept on file by

* *Number to be assigned by the Commanding Officer, USCG Marine Safety Center.